

Kary Myers

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Professional Experience

Los Alamos National Laboratory, Los Alamos, New Mexico
Scientist, Statistical Sciences Group, 2006-present.

WhizBang! Labs Research, Pittsburgh, Pennsylvania
Graduate Research Intern, 2001.

AT&T Shannon Labs, Florham Park, New Jersey
Graduate Research Intern, Artificial Intelligence Department, 1999 and 2000.

Education

Carnegie Mellon, Pittsburgh, Pennsylvania
Ph.D., Statistics, 2006.
Thesis: Developing Models to Reveal Brain Activation in Massive Neuroimaging Datasets

M.S., Machine Learning, 2002.
Master's project: A Boosting Approach to Topic Spotting on Subdialogues

B.S. with University and College Honors, Statistics (Computer Science Minor), 1999.
Honors thesis: Finding Galactic Clusters in Massive Astrophysical Datasets

Honors and Awards

- Los Alamos Program Achievement Award, 2007.
- AT&T Labs Fellowship, 1999-2005.
- Student Paper Competition Winner, Statistical Computing and Graphics Sections of the American Statistical Association, 2004.
- Student Scholarship, Spring Research Conference on Statistics in Industry and Technology, 2004 and 2005.
- Outstanding Reviewer Award, American College of Gastroenterology, 2004.
- Carnegie Scholars Program Fellowship, 1999-2003.
- Election to Phi Beta Kappa, Phi Kappa Phi, and Sigma Xi, 1999.
- Richard Schoenwald Phi Beta Kappa Undergraduate Research Prize, 1999.
- Lucent Technologies First Prize, Sigma Xi Undergraduate Research Competition, 1999.

Activities and Service

Editor, *CHANCE* magazine, 2010-present.
Program chair (elected), Section on Physical and Engineering Sciences, American Statistical Association, 2010 (chair elect), 2011 (chair).
Program chair (appointed), Council of Chapters, American Statistical Association, 2010.
Peer reviewer, National Institutes of Health: Infectious, Reproductive, Asthma, and Pulmonary (IRAP) and Neurological, Aging and Musculoskeletal Epidemiology (NAME) Study Sections.
Reviewer, *Technometrics*, *The American Statistician*, *Optical Engineering*, *Journal of Computational Neuroscience*, *American Journal of Gastroenterology*.
Invited session organizer, Joint Statistical Meetings, 2010, 2006.
Member, Student Award Selection Committee, Section on Bayesian Statistical Science, 2009.
Instructor, Expanding Your Horizons Los Alamos, 2008.
Co-chair, Quality and Productivity Research Conference, 2007.
Organizer, Special Award of the ASA, Intel International Science & Engineering Fair, 2007.

Professional Memberships

- Phi Beta Kappa
- American Statistical Association
- Phi Kappa Phi
- Sigma Xi Scientific Research Society

Computing Skills *Statistical Software and Tools*: R, S-PLUS; some SAS, Minitab, and SPSS.
Languages: MATLAB, C++, C, Java, Python, Perl; some shell scripting.

Refereed Publications

- S. Brumby, **K. Myers**, and N. Pawley. Capturing dynamics on multiple time scales: A multilevel fusion approach for cluttered electromagnetic data. *SPIE Defense, Security, & Sensing*, 2010.
- N. Pawley, **K. Myers**, J. Galbraith, and S. Brumby. Capturing dynamics on multiple time scales: A hybrid approach for cluttered electromagnetic data. *43rd Asilomar Conference on Signals, Systems, and Computers*, 2009.
- T. Burr and **K. Myers**. Effects of background suppression of gamma counts on signal estimation. *Applied Radiation and Isotopes*, **67**, 1729-1737, 2009.
- T. Burr and **K. Myers**. Signatures for several types of naturally occurring radioactive material. *Applied Radiation and Isotopes*, **66**, 1250-1261, 2008.
- K.L. Myers**, A.E. Brockwell, and W.F. Eddy. State-space models for optical imaging. *Statistics in Medicine*, **26**, 3862-3874, 2007.
- T. Burr, J.R. Gattiker, **K. Myers**, and G. Tompkins. Alarm criteria in radiation portal monitoring. *Applied Radiation and Isotopes*, **65**, 569-580, 2007.
- K. Myers**. The billion byte brain: Combining physiological data and gigabytes of images to improve maps of brain activity. *2004 Proceedings of the American Statistical Association*.
• Winner, *ASA Statistical Computing and Graphics Sections Student Paper Competition*
- K. Myers**, M. Kearns, S. Singh, and M.A. Walker. A boosting approach to topic spotting on subdialogues. *Proceedings of the Seventeenth International Conference on Machine Learning*, 655-662, 2000.

Technical Reports

- N.H. Pawley, **K.L. Myers**, J.P. Layne, and R.J. Nemzek. Analysis of RF signatures from multiple DOE foundries. Los Alamos National Laboratory Technical Report LA-CP-10-01600, October 2010.
- N.H. Pawley, R.J. Nemzek, **K.L. Myers**, and T.D. Hamlin. Variation of RF signatures with simultaneous operation of multiple V-DUTs. Los Alamos National Laboratory Technical Report LANL-NISC-10-20, 11 February 2010.
- K.L. Myers**, R.J. Nemzek, N.H. Pawley, and T.D. Hamlin. Variation of RF signatures across ten V-DUTs. Los Alamos National Laboratory Technical Report LANL-NISC-10-0009, 26 January 2010.
- K.L. Myers**, N.H. Pawley, and R.J. Nemzek. V-DUT Pseudostacking: Understanding the limitations imposed by unit-to-unit variability in an idealized stacking scenario. Los Alamos National Laboratory Technical Report LANL-NISC-10-0010, 26 January 2010.
- R.J. Nemzek, T.D. Hamlin, **K.L. Myers**, and N.H. Pawley. Spectral prescriptions for DUTs used in the Kazoo and INL test campaigns. Los Alamos National Laboratory Technical Report LANL-NISC-09-0215, December 2009.
- R.J. Nemzek, S. Bender, T.D. Hamlin, J. Layne, **K.L. Myers**, and N.H. Pawley. LANL RF measurements during the Kazoo-2 campaign. Los Alamos National Laboratory Technical Report LANL-NISC-09-0216, 10 December 2009

Other Articles

- K. Myers**. Strategies for pursuing graduate school fellowships. *International Society for Bayesian Analysis Bulletin*, **15**(2), 2008.
- W.F. Eddy, R. McNamee, and **K.L. Myers**. Imaging the living brain. *CHANCE*, **20**(4), 2007.

Selected Invited Presentations

- *Malt Balls or Malt Beer? Detecting the Prohibited Operation of Dual-Use Facilities.* Lawrence Livermore National Laboratory and Kansas State Department of Statistics, November 2010.
- *Same or Different? Identifying Similarities and Computing Distances Between Images.* Joint Statistical Meetings, Washington, DC, August 2009.
- *Learning from Neuroscience Data* (with Rob Kass). Summer Workshop in Neuroimaging, Center for the Neural Basis of Cognition, Pittsburgh, Pennsylvania, June 2007.
- *Developing Models to Reveal Brain Activation in Massive Neuroimaging Datasets.* Spring Research Conference on Statistics in Industry and Technology, Park City, Utah. June 2005.
- *Revealing Brain Activity with Filters.* ENAR Spring Meeting, Austin, Texas. March 2005.
- *Brains on Film: Using Optical Imaging to Build Maps of Brain Activity.* Interface 2004, Baltimore, Maryland. May 2004.
- *The Billion Byte Brain: Combining Physiological Data and Gigabytes of Images to Improve Maps of Brain Activity.* Center for Automated Learning and Discovery Research Day, Carnegie Mellon. February 2004.
- *The Progression of Occupational Asthma: Assessing Data Quality for Studying Changes in Nasal Airway Volume Via Magnetic Resonance Imaging of Mice.* Statistics Department, Carnegie Mellon. December 2002.
- *And the Winner Is... Extracting Information from Sports Recaps.* WhizBang! Labs Research, Pittsburgh, Pennsylvania. July 2001.
- *Who Is John Galt? Machine Learning for Extraction of Biographies from Text.* AT&T Shannon Labs, Florham Park, New Jersey. August 2000.
- *Finding Galactic Clusters in Massive Astrophysical Datasets.* Center for Automated Learning and Discovery Corporate Members Meeting, Carnegie Mellon. November 1999.
- *Probabilistic Methods for Robotic Landmine Search.* Sigma Xi Undergraduate Research Competition, Carnegie Mellon. May 1999.

Selected Contributed Presentations

- *Brain Activity at Nine Million Bytes per Second: Synchronizing Video Data and Physiological Recordings to Reveal Brain Function.* Spring Research Conference on Statistics in Industry and Technology, Gaithersburg, Maryland. May 2004.
- *Brain Function, The Movie: Optical Imaging of Brain Activity.* ENAR Spring Meeting, Pittsburgh, Pennsylvania. March 2004.
- *The Billion Byte Brain: Toward Removing Physiological Effects from Gigabytes of Optical Imaging Data.* Workshop on Statistical and Mathematical Modeling of fMRI Data, Mathematical Biosciences Institute, The Ohio State University. March 2004.
- *A Boosting Approach to Topic Spotting on Subdialogues.* International Conference on Machine Learning, Stanford University. July 2000.

**Graduate
Research**

Making Maps of Brain Activation with Optical Imaging Data

Carnegie Mellon, 2003-2006

- Advisors: William F. Eddy, Seong-Gi Kim

Thesis research. Identifying and modeling physiological and instrumental sources of noise in optical imaging data in order to make better maps of brain activity.

Magnetic Resonance Imaging for Studying Changes in Nasal Airway Volume

Carnegie Mellon, 2002

- Advisors: Nicole Lazar, William E. Brown

Identified areas for improving experimental design and magnetic resonance imaging technique in a study of mice exposed to isocyanates.

Maximum Entropy Markov Models for Part-of-Speech Tagging

WhizBang! Labs Research, 2001

- Advisor: Fernando Pereira

Wrote software using maximum entropy Markov models (McCallum et al., 2000) to assign part-of-speech tags to words in a body of text.

Machine Learning for Extraction of Biographies from Text

AT&T Shannon Labs, 2000

- Advisors: Michael Collins, Steve Abney

Explored the task of augmenting a question answering system with a means of identifying descriptive text that could answer “Who is X?”

A Boosting Approach to Topic Spotting

AT&T Shannon Labs, 1999

- Advisors: Michael Kearns, Satinder Singh, Marilyn A. Walker

Examined ways of using BoosTexter (Schapire & Singer, 2000) with the Switchboard corpus of spontaneous speech to develop an end-to-end system for a topic spotting task.

**Undergraduate
Research**

Finding Galactic Clusters in Massive Astrophysical Datasets

Carnegie Mellon, 1998-1999

- Advisors: Andrew Moore, Larry Wasserman

Senior honors thesis. Worked with a team of astrophysicists, statisticians, and computer scientists to develop technologies for real-time clustering of galactic data from the new generation of digital sky surveys. Applied cluster analysis techniques and the EM algorithm to identify and characterize clusters of galaxies.

Probabilistic Robotic Search for Landmines

Carnegie Mellon, 1998

- Advisors: Howie Choset, Stephanie Land

Developed probabilistic methods to guide a robotic search of a landmine field, incorporating sensor input and pre-existing knowledge of minefield patterns.

Causal Inference in Clinical Data

University of Pittsburgh and Carnegie Mellon, 1998

- Advisors: Greg Cooper, Brian Junker, Larry Wasserman

Explored causal relationships between clinical actions and outcomes among patients with community-acquired pneumonia. Wrote software to automate methods for computing probabilities of counterfactual queries (e.g., “If the patient had been treated at home, would he or she have survived?”).